WHAT IS CLAIMED IS:

1. A magnetic connector acquiring connection with a mating connector by magnetic force, the connector comprising:

a base member having a particular surface to be faced to the mating connector upon connection; and

an electrode terminal fixed to the base member and adapted to be electrically connected to the mating connector, the base member having a magnetic force generating portion having a plurality of magnetic poles for producing the magnetic force, N and the S poles of the magnetic poles being alternately arranged along the particular surface in a predetermined direction, the connector being properly positioned relative to the mating connector by the magnetic force.

2. The magnetic connector according to claim 1, wherein the magnetic force generating portion has a plurality of permanent magnets arranged adjacent to each other in the predetermined direction.

3. The magnetic connector according to claim 2, wherein the magnetic force generating portion has a magnetically neutral member interposed between adjacent ones of the permanent magnets.

4. The magnetic connector according to claim 1, wherein the magnetic force generating portion has a magnetic material of a plate-like shape, the magnetic poles being formed by perpendicular magnetization of the magnetic material in its thickness direction and arranged adjacent to each other in the predetermined direction.

5. The magnetic connector according to claim 4, wherein the magnetic material has an unmagnetized portion interposed between adjacent ones of the magnetic poles.

6. The magnetic connector according to claim 1, wherein the base member has an elastic insulating layer coupled to the magnetic force generating portion and defining the particular surface, the electrode terminal being fixed to the insulating layer.

7. The magnetic connector according to claim 6, wherein the electrode terminal comprises a metal thin film extending along the particular surface.

8. The magnetic connector according to claim 7, wherein the insulating layer has a cohesive layer interposed between the magnetic force generating portion and the metal thin film.

9. The magnetic connector according to claim 8, wherein the insulating layer has a resin layer interposed between the magnetic force generating portion and the cohesive layer.

10. The magnetic connector according to claim 9, wherein the insulating layer has a cohesive layer interposed between the magnetic force generating portion and the resin layer.

11. The magnetic connector according to claim 1, wherein the particular surface is formed as a flat surface.

12. The magnetic connector according to claim 1, wherein the particular surface is formed as a cylindrical surface around an axis extending in the predetermined direction.

13. The magnetic connector according to claim 1, wherein the base member has a stopper formed at one end in the predetermined direction to engage the mating connector.

14. The magnetic connector according to claim 1, wherein the magnetic poles comprise a first one and a second one which are different from each other in size in the predetermined direction.

15. A magnetic connector apparatus comprising first and second connectors connected to each other by magnetic force, the first connector

having a magnet and a stopper adjacent to the magnet, the second connector having a magnet with different magnetic poles alternately arranged, the second connector being butted to the stopper by repulsive force produced between the magnets of the first and the second connectors, thereby positioning the first and the second connectors relative to each other.

16. A magnetic connector acquiring connection with a mating connector by magnetic force, the connector comprising:

a peripheral electrode having a particular surface to be faced to the mating connector upon connection and a groove formed in the particular surface;

an insulating member disposed in the groove, a center electrode fixed to the insulating member; and

a magnet fixed to a rear surface of the peripheral electrode opposite to the particular surface and producing the magnetic force.

17. A magnetic connector according to claim 16, wherein the peripheral electrode has a protruding portion formed on the rear surface at a position corresponding to the groove, the magnet being arranged near the protruding portion.